

## **SPECIAL MULTILOAD OPTIONS FOR BULK CARRIERS**

### ◆ **Draft Survey**

**Before and after any loading or discharging operation** it is necessary to perform a **Draft Survey**. In MULTILOAD we have incorporated as an option our Draft Survey Option allowing the Master to perform Draft Survey Analysis correctly and accurately. This Option **not only** does the **calculation** but **also** gives **detailed instructions of how to perform a Draft Survey**, through extensive On-Line Help.

### ◆ **Cargo Loading Sequence with Report (including “free mode” method)**

This **NEW Multiload Option “Cargo Loading Sequence with report”** including **“Free Mode”** method is a total solution to the requirement for Bulk Carriers **to prepare a Loading or Unloading Plan before arriving to the Terminal** (as per Common Structural Rules Chapter 4, Section 8, par. 2.1.2, where the Loading / Unloading Sequence is to be agreed with the terminal on the basis of achievable rates of change of ballast).

During Ship Loading/Unloading in Port it is very important that the Master is in a position to give a step by step report as to what quantities of cargo from which holds should be loaded / discharged.

This MULTILOAD-Option generates and prints the loading/discharging sequence. Most importantly it checks at many intermediate stages (every 2,5 minutes real time loading or unloading cargo) the Stability or Strength as well as Drafts, Trim and other ship parameters.

At the end of each stage you get remarks if some parameters have exceeded permissible values.

### ◆ **Air Draft Calculation From Hatches**

This MULTILOAD Option **presents on screen the air drafts from the mid point of Cargo Hatches**. Additionally there is a **custom point** where you can input any of its coordinates and **obtain the Air Draft for the current loading condition**. The same option prepares a printed report with Air Draft Information.

### ◆ **Multiload warning regarding SOLAS Chapter XII- Regulation 14**

**After 1<sup>st</sup> July 2006**, all bulk carriers of 150 m in length reaching the age of 10 years (keel laying date), must comply with **SOLAS Chapter XII-Regulation 14** – New Safety Requirements for Bulk Carriers “Restriction from sailing with any hold empty”.

In **Multiload** you can have **warning indicators** with regard to Regulation 14 above. This warning will appear on the weight input screen of Multiload as well as on the first page of all Multiload print outs.

### ◆ **Departure - Arrival Calculation**

A unique tool for instant creation of Arrival Condition from the Departure, or visa versa. **Ideal for Panama Canal Transit**. Automatically takes into account voyage miles, speed, consumption, ROB's, desired safety margins, FO, DO, and FW tank capacities and consumption sequences as well as any bunkering operations.

- ◆ [Max. Allowable Steel Coils Loading](#)

This Option offers a **unique advantage** to all Multiload and Non-Multiload users. Given the **Length and Weight of any given Coil**, for a particular Cargo Hold this Study in the form of Manual and/or Multiload Option, **determines the Maximum Number of Tiers** (1, 1.5, 2, 2.5, 3, etc.) **of Coils that can be loaded** with 2, 3, or 4 Numbers of Dunnage respectively.

- ◆ [Ship Loading Plan on screen](#)

With this MULTILOAD Option you get a **graphical representation of the ship with all Deadweight Items shown on profile and plan views**. You may also see the percentage full for each Compartment/Tank in representative color. In the Plan View of the Vessel, partially loaded compartments are partially painted in left-to-right direction, according to percentage.

Finally you can scroll through the Compartments and Tanks and view their content details.

A blue line denotes the ship current Water Line.

If the SF & BM Diagram to the Ship Loading Plan Option is available, press the switch button to change from Ship Loading Plan on Screen and back.

If you would like to switch to a big view of the Plan press the maximize button or double click on the Plan's title. Press the restore button to switch back to normal view and continue your loading.

- ◆ [Ship's Girder Deflection and Deadweight Gain or Loss](#)

This special Multiload function **apart from the typical Girder Deflection due to longitudinal Bending Moment incorporates the thermal deflection at midships due to air-sea water temperature difference**. This is especially important when navigating at Plimsoll marks in cold waters (e.g. North Atlantic) with sun. In this condition the Hogging of the Hull is increased (or the Sagging is reduced) as the deck is warmed up with the sun radiation.

- ◆ [Real Time Loading / Water Ballast Exchange](#)

This Option is applicable for Loading or Discharging. Given the **Loading/Discharging Rates MT/Hour**, MULTILOAD **will load/discharge groups of Tanks** that you select and **generate** in a few minutes **a list of Ship Drafts, Total Cargo, Strength, Stability, Trim, Propeller Immersion, Air Drafts and Bridge Visibility** against time (in 10 minutes internals).

At the end of this report there will be a list of the extreme values of the above mentioned parameters and at what time those will take place.

- ◆ [Printout of N.C.B/Canadian/Australian Form for Grain Loading](#)

Ships that load/discharge grain in **US ports, Canada and in Australia** are **requested** to fill the **National Cargo Bureau's (N.C.B.) form, the Canadian form and the Australian form for Grain Loading** respectively.

Using this MULTILOAD Option you get the N.C.B. or the Canadian or the Australian form printed in a matter of seconds ready for submission to the Cargo Surveyor.

#### ◆ Autoload

**Autoloading will be an Indispensable Tool for your Chartering Department.**

This is the most powerful MULTILOAD-Option. The AUTOLOAD Option does all the work of ship pre-loading calculation for you.

AUTOLOAD uses a powerful Artificial Intelligence (AI) routine that **maximizes the Vessel Utilization Factor, given the cargo weight to be loaded and a set of operational constraints** (100% V.U.F means that all cargo loaded occupies 100% of the assigned compartments). It automatically distributes the cargo while keeping all other requirements within permissible values, if this is possible. Alternatively, if the restrictions set by the user are contradictory, then MULTILOAD will try to establish a solution that will meet some but not all of the constraints. In this case a feasible solution can be obtained by adjusting the cargo to be loaded values accordingly.

#### ◆ Cargo Compartment Group Definition

When you first run MULTILOAD on your computer, you have to define the Cargo Compartment Groups that will be used in the Cargo Assignment Into Groups function.

You can define which compartments belong to each group, the filling sequence and the filling method to be used.

Filling Sequence defines the order that the compartments of each Group will be loaded. Equal Filling Sequence numbers denotes that the compartments will be loaded symmetrically.

#### ◆ Cargo Assignment Into Groups

With this MULTILOAD function you can calculate the Vessel Utilization Factor (100% V.U.F. means that all cargo loaded occupies 100% of the assigned compartments) for every combination of Cargo Type and Cargo Compartment Group. It is especially useful for Tanker Loading where we have cargo tank groupage. In this screen you can also see the cargo left out. For each cargo group, you can select between two filling methods: Leave Last Slack (which loads all the compartments up to 100% full, leaving the last one slack) and Even Distribution, which loads the compartments evenly (the same percentage to full).

#### ◆ Manufacturers default lists of General Cargo Items

Another use of the **Detailed General Cargo Loading** is when a **specific compartment is divided in various spaces**. These spaces can be defined only by the Manufacturer and **each particular space is described with details** such as lower and upper bound for VCG, left and right for TCG, aft and fore for LCG check and also max load for each space. **In Manufacturer's List you can load cargo of variable weight and VCG, LCG & TCG in each defined space in a particular hold**, as long as is within the specified bounds. This will **group the weights** in each particular space and will **calculate the resulting load and centers of gravity in the particular hold**. All above descriptions are derived from vessels' manuals and after collaboration with the company. These descriptions are already saved as Item Lists for each specific compartment and the User can use them any time.

◆ [Deadweight & Air Draft Tables Manual](#)

This very handy **booklet** contains **Deadweight and Air Draft Tables in both metric and British Units**. This manual is a **quick reference for typical questions** like the deadweight at a given draft or the air draft at a given hatch or at radar mast for a given mean draft and trim. It also **includes** hatch coaming dimensions, tank top breadth between hoppers in Cargo Holds, etc.